

BIBIKOV, I.; DEREVIANKO, K.; KAZACHKO, V.; KIRICHENKO, I.; KUCHER, N.;
MACHUKHO, A.; NABATNIKOV, P.; SOKOLOV, B.; SIVOKON'Ya; US, V.;
SHCHIGALEV, V.; BURAVENKO, N.; KOVSHAROV, S.; SOKOLOV, S.;
ZAGORUL'KO, S.; TSYBA, M.; FOMENKO, I.; LYAKHOVETSKIY, M.

Let us help farmers grow an abundant crop. Grazhd. av. no.3:3
Mr '61. (MIRA 14:3)

(Aeronautics in agriculture)

avoid this damage are described.

KAZACHKOV, A.I., inzhener; KUROCHKIN, F.I., inzhener; MARCHENKO, Ye.A., kandidat tekhnicheskikh nauk.

Operating conditions for shunt switches in longitudinal compensation installations. Elek. sta. 28 no.2:56-60 F '57. (MIRA 10:4)
(Electric power distribution) (Electric transformers)

KAZACHKOV, A.I., inzh. (Leningrad); KLIMOV, V.A., inzh. (Leningrad); POLYAK,
G.I., inzh. (Leningrad)

Use of a calculating board in computing power systems with d.c.
current transmission. Elektrichestvo no.9:11-14 S '60.

(MIRA 13:10)

(Electric power distribution)

L 13052-66 EWT(m)/EWA(d)/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) MJW/JD/HW

ACC NR: AP5027911

SOURCE CODE: UR/0133/65/000/011/1021/1023

AUTHOR: Sominskiy, Z. A.; El'bert, S. N.; Bisk, M. B.; Potopayev, A. P.; Kazachkov, B. M.; Borodin, A. I.; Chistyakov, V. G.

ORG: none

TITLE: Parameter refinement in the hot working of tubes made from Kh18N10T, 30KhGSA and Kh5M steels

53
B
44.53 14 14 14

SOURCE: Stal', no. 11, 1965, 1021-1023

TOPIC TAGS: tool steel, metal tube, plastic deformation

ABSTRACT: Optimum preheating schedules are established for the subsequent hot working of tubes made of Kh18N10T steel. Care was taken to hold the mandrel temperature below 600°C in order to preserve the useful tool life. Thermocouples were placed into various portions of the mandrel and the temperatures measured for varying conditions. All tubes were drawn to 100 m air blast, water-air spray mixture and water spray cooling was employed. A mixture of zinc oxide and graphite was used as a lubricant. Data are presented for tubes drawn to 40, 50, 60 and 70 m after various preheat temperatures (between 80 and 250°C) and for the cooling methods discussed above. Data on the change in mandrel temperature showed a large degree of variation (310 to 510°C) increasing with draw length and preheat temperature. The cooling efficiency also was

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UDC: 621.774.39

L 13052-66

ACC NR: AP5027911

a significant factor, the highest cooling rate being achieved with water spray cooling. For Kh18N10T steel, the preheat temperature recommended was between 150-200°C. The other phase of the study dealt with the determination of optimum temperature intervals for the hot deformation of 30KhGSA and Kh5M steels. Mechanical property data were obtained in the form of dynamic bend resistance as a function of temperature of testing (ambient temperature to 700°C) for Kh5M and impact resistance as a function of temperature of testing (20-600°C) for 30KhGSA. Also the fracture appearance was analyzed in both cases. The plasticity of Kh5M steel increased up to the temperature range of 300-400°C where it remained constant and subsequently rose again. The transition from ductile to brittle fracture took place at temperatures of about 40-60°C. The explanation proffered for the retardation in rise of plasticity in the range 300-400°C was dislocation solute interactions (C and N especially). This Cottrell type cloud retarded the motion of dislocations. At higher temperatures, the ductility of the steel increased due to thermal activation assisting the release of dislocations from their C and N atmospheres. For 30KhGSA steel, the impact strength rose with temperature to 150°C where it reached a maximum at 150-200°C and subsequently dropped, reaching another peak at about 400°C. Thereafter, the drop became very sharp and at 500°C the value was the same as for room temperature. Above 550°C, a sharp rise in impact strength occurred as a function of temperature. Again Cottrell cloud was used to explain the leveling off of impact strength at 400-550°C. Alloying elements which combine chemically with the solute C and N atoms offset this behavior; this explains the higher

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ACC NR: AP5027911

plastic properties of Kh5H. Considering the effect mentioned, it was concluded that the optimum working temperature interval for Kh5H should be 200-300°C, and 100-200°C for 30KhGSA. Thus the optimum preheating temperatures in the inductor should be 100-200°C and 60-120°C respectively. The tool life was considerably lengthened by following the above hot working parameters. Orig. art. has: 2 figures, 2 tables.

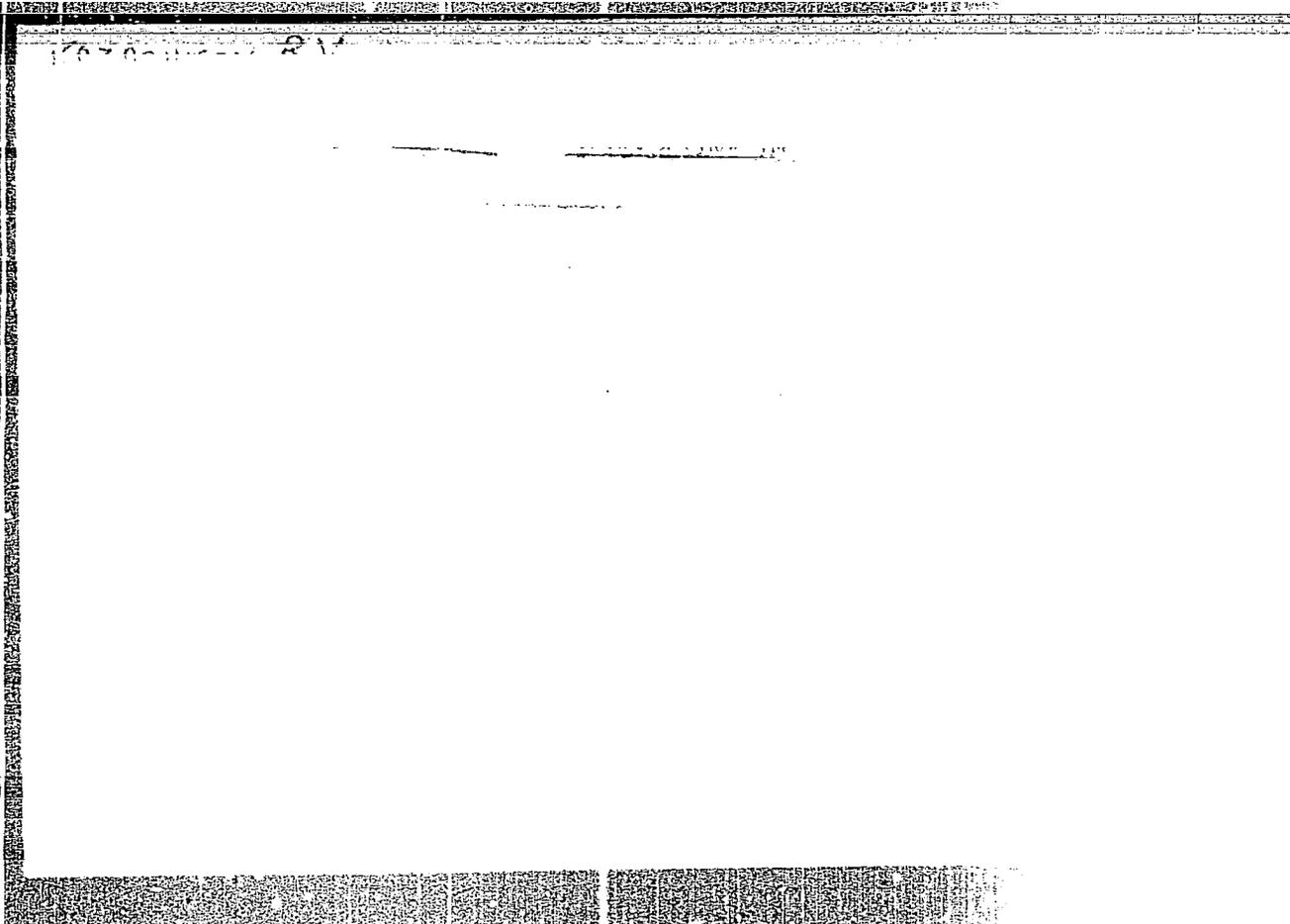
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ORIG REF: 002/

OTH REF: 002

Card 3/3



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KAZACHKOV, B. V.

USSR/Mathematics - Group Theory

Jul/Aug 53

"Existence and Conjointness of Subgroups in a Finite Group," S. A. Chunikhin, Tomsk

Mat Sbor, Vol 33 (75), No 1, pp 111-132

Weakens the conditions in the Silov-type theorems. Demonstrates two theorems on the sufficient and necessary criteria for the existence of subgroups and a theorem on the maximum subgroups of P-soluble groups. Cites related work of O. Ore ("Theory of Groups of Finite Order," Duke Math J. 5 (1939)). Cites the Soviet works of P. A. Gol'berg (1949), S. L. Edel'man (1951), and B. V. Kazachkov (1952). Presented 22 Aug 52.

271784

KAZACHKOV, B. V. (Tomsk)

Schur - Zassenhaus theorem for enumerable locally finite groups.
Mat. sbor. 50 no.4:499-506 Ap '60. (MIRA 13:8)
(Groups, Theory of)

KAZACHKOV, B.V. (Tomsk)

Conditions for strong factorability of groups. Mat.sbor. 57
no.3:323-332 J1 '62. (MIRA 15:8)
(Groups, Theory of)

KAZACHKOV, B.V.

Finite \mathbb{Z} -conjugation of groups. Dokl. AN SSSR 144 no.5:971-
973 Je '62. (MIRA 15:6)

1. Tomskiy gosudarstvennyy pedagogicheskiy institut. Predstavleno
akademikom A.I.Mal'tsevim.

(Groups, Theory of)

KAZACHKOV, D.L.

Mechanization of the designing, copying and multiplying work.
Biul.tekh.-ekon.inform. no.5:82-83 '61. (MIRA 14:6)
(Copying process—Technological innovations)
(Design, Industrial)

KAZACHKOV, D.L., inzh.

Electrographic copying and reproducing machines. Mekh.i avtom.proizv.
17 no.9:44-47 S '63. (MIRA 16:10)

KAZACHKOV, David L'vovich; KRAINSKIY, A.I., red.; TELYASHOV,
R.Kh., red.izd-va; GVIRTS, V.L., tekhn. red.

[Mechanization of the preparation and copying processes
of technical documentation] Mekhanizatsiia izgotovleniia i
razmnozheniia tekhnicheskoi dokumentatsii. Leningrad,
1963. 34 p. (Leningradskii dom nauchno-tekhnicheskoi pro-
pagandy. Obmen peredovym opytom. Seriia: Mekhanizatsiia in-
zhenernogo i upravlencheskogo truda, no.2) (MIRA 16:11)
(Photocopying processes)

KAZACHKOV, D.L.; TIMOFEYEVSKIY, T.P., inzh., retsenzent

[Mechanization of structural design] Mekhanizatsia
proektno-konstruktorskikh robot. Moskva, Mashinostroenie,
1964. 179 p. (MIRA 17:8)

AUTHOR: Kaeachkov, D. L. (Engineer)

TITLE: Mechanization of retrieval of technical documents

SOURCE: *Mekhanizatsiya i avtomatizatsiya proizvodstva*, no. 1, 1965, pp. 1-4

into 10 sectors or subclasses (transmission assemblies, comac factors); each

ASST. DIR. FOR INT. SEC. AFFS.
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ASSOCIATION

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KAZACHKOV, D.L.

Mechanical copying of drawings by electrophotographic methods.

Mashinostroitel' no.1:7-11 Ja '65.

(MIRA 18:3)

ZILIST, Petr Sigizmundovich; KAZACHKOV, David L'vovich; DVORKIN, A.L., inzh., retsenzent; UTKIN, K.V., inzh., retsenzent
VERDNIKOV, Ya.V., nauchn. red.; NIKITINA, M.I., red.

[Overall mechanization of planning and designing operations
in shipbuilding] Kompleksnaia mekhanizatsiia proektno-
konstruktorskikh rabot v sudostroenii. Leningrad, Sud-
stroenie, 1965. 315 p. (MIRA 18:12)

KAZACHKOV, G.

Handbarrow for carrying cans with foam powder. Pozh.delo 7 no.4:
28 Ap '61. (MIRA 14:4)
(Fire departments--Equipment and supplies)

KAZACHKOV, D.L., inzh.; NOVIKOVA, L.K., red.; SHILLING, V.A., red.
izd-va; BELOGUROVA, I.A., tekhn. red.

[Mechanization of the preparation and multiplication of blueprints and other technical documents] Mekhanizatsiia izgotovleniia i raznozheniia chertezhei i drugoi tekhnicheskoi dokumentatsii. Leningrad, 1962. 23 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Organizatsiia i ekonomika proizvodstva, no.1) (MIRA 15:8)
(Blueprinting)

Kaz. Bekkov, J.P.

S/123/59/000/010/053/068
A004/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1959, No. 10, pp. 186-187, # 38656

AUTHORS: Khitrak, S. I., Kazachkov, I. P., Zavaluyev, I. F., Babkov, T. M.,
Moshkovich, Ye. I.

TITLE: The Effects of Nonmetallic Impurities of Ferrochrome on the Quality
of Stainless Steel

PERIODICAL: Tekhn.-ekon. byul. Sovnarkhoz Zaporozhsk. ekon. adm. r-na, 1958,
No. 3, pp. 44-47

TEXT: The contents of nonmetallic impurities in carbon-free ferrochrome fluctuates within a wide range and principally is directly interdependent on the magnitude of Si-content in it. Si, lowering the solubility of O_2 in ferrochrome, combines with it and forms oxides. Holding the liquid ferrochrome in the ladle under a vacuum ensures a liberation of the gases and leads to an intensive agitation of the metal. The continuous exchange of metal being in contact with slag promotes the oxidation of Si by slag oxides. The passing over into the slag of suspended nonmetallic impurities in the metal agitated and cooled by vacuum treat-

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S/123/59/000/010/053/068
A004/A001

The Effects of Nonmetallic Impurities of Ferrochrome on the Quality of Stainless Steel

ment, is facilitated. In vacuum-treated ferrochrome the Si-content is considerably lowered and, correspondingly also that of the nonmetallic impurities (approximately 35%). Test ingots of the 2X13 (2Kh13) grade stainless steel, weighing 2.8 tons, were smelted in 20-ton electric furnaces from a fresh charge with additions of vacuum-treated and non-treated Kp00 (Khr00) grade ferrochrome to the nonreduced metal in amount of 25% of the melt weight. Vacuum-treated ferrochrome differs from the non-vacuum-treated by a lower content of nonmetallic impurities (on the average by 25%) and a somewhat higher Si-content (on the average by 0.12%). An analysis of the content of nonmetallic impurities in steel assays taken from the melt in the middle of the teeming, showed that the degree of contamination of ferrochrome by nonmetallic impurities affects also the purity of the steel, by 16% on the average. An increase of the Si-content in ferrochrome affects the degree of steel contamination with nonmetallic impurities. Si, introduced into steel, quickly oxidizes, and since the 2Kh13 grade steel is of a high ductility, it is difficult to float the impurities, which have been brought in by the ferrochrome and which were formed owing to Si-oxidation, into the slag. The

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SOV/128-58-12-4/21

AUTHORS: Levin, S.L., and Kazachkov, I.P.

TITLE: The Effect of Smelting and Deoxidation Technology on the Distribution of Sulfide Impurities in Open-Hearth Steel Castings (Vliyaniye tekhnologii vyplavki i raskisleniya na raspredeleniye sul'fidnykh vklyucheni v otlivkakh iz martenovskoy stali)

PERIODICAL: Liteynoye proizvodstvo, 1958, Nr 12, pp 7 - 8 (USSR)

ABSTRACT: Higher mechanical properties and resistance to cracks in steel casts are ensured by the disorderly spacing of sulfide impurities in the alloy. In this connection, the effect of smelting and deoxidation technology on the character of the sulfide impurity spacing in "25 - 30L" grade steel was investigated. It was proved that the ferrous oxide content in the final slag has a direct effect on the grouping of the sulfide impurities, as the increased content of ferrous oxide prevents the chain-shaped grouping of such impurities, and reduces the critical aluminum concentration in the bath. It was proved by experiments that an aluminum addition to the metal stream in casting more effective-

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The Effect of Smelting and Deoxidation Technology on the Distribution of Sulfide Impurities in Open-Hearth Steel Castings

SOV/128-58-12-4/21

ly ensures the necessary aluminum concentration than does an aluminum addition to the ladle. Satisfactory disorderly spacing of sulfide impurities was obtained by an aluminum addition of 400 g/t to the metal stream, or by adding 750 g/t aluminum to the ladle with an extra addition of 300 g/t to the metal stream. There are 4 graphs, 2 micro-photos and 1 table.

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FAZACHKOV, I.P., Cand Tech Sci --(disc) ^{the} "Effect of vacuuming of
non-carbonic ferrochromium ^{up} on its contamination with oxide ^{MM-} ~~ins-~~
^{particles} ~~clusions.~~" Dnepropetrovsk, 1959. 13 pp (Min of Higher Education
USSR. Dnepropetrovsk Order of Labor and Banner Metallurg Inst ^{Inst}
in I.V. Stalin). 150 copies (ML,38-59, 116)

37

18 (5)

AUTHORS:

Levin, S. L., Kazachkov, I. P.

SOV/163-59-2-8/48

TITLE:

Change in the Content of the Oxide Inclosures in Metals
During Melting in the ~~Open-Hearth~~ ^{Furnace} (Izmeneniye soderzhaniya
okisnykh vklyucheniye v metalle po knodu martenovskoy plavki)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959,
Nr 2, pp 43-47 (USSR)

ABSTRACT:

The oxide inclosures in the metal samples which were taken during the melting period up to the initial deoxidation consist mainly of ferric oxide, aluminum oxide, and silicates as well as of small quantities of quartz and spinels. The rate of the carbon combustion in the boiling period exercises a decisive influence on the purification of the metals from oxide inclosures (Table 2). The data of table 2 show that the content of the oxide inclosures is reduced with the increase of the rate of the carbon combustion. The dynamics of the change in the content and in the composition of the oxide inclosures during the deoxidation period of the metal was investigated by an addition of ferromanganese, then ferro-silicon, or only ferromanganese. The content and the composition of the oxide inclosures in the steel samples in

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Change in the Content of the Oxide Inclusions in
Metals During Melting in the Open-Hearth Furnace

SOV/163-59-2-8/48

dependence on the added aluminum quantity were investigated and the results are given in table 5. Metal samples which were oxidized only with silicon and manganese contain mainly silicate inclusions. If aluminum is added to these samples they contain also aluminum oxide inclusions. Aluminum binds the oxygen of the steel samples in the deoxidation of the steel samples with aluminum, and aluminum occurs as impurification in the inclusions. The determination of the nonmetallic inclusions was carried out by the Engineers N. P. Spasskaya and L. Yu. Vaynshteyn and the Technician L. I. Shcheglova. There are 5 tables and 5 Soviet references.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut
(Dnepropetrovsk Metallurgical Institute)

SUBMITTED: June 17, 1958

Card 2/2

KAZACHKOV, I. P.

TABLE I BOOK EXPLANATION 507/528

Abstracts each book. Excerpted by fish-bismuthite anoxic protective steel
Primeneniye vakuum v metallurgii (Use of Vacuum in Metallurgy) Moscow, Izdatvo
M SSSR, 1960. 316 p. Errata slip inserted. 4,500 copies printed.

Sponsoring Agency: Institute for Fish-Bismuthite Anoxic Protective Steel.
Excerpted by fish-bismuthite anoxic protective steel.

Comp. Ed.: A.M. Smolin, Corresponding Member, Academy of Sciences USSR; Ed. of
Publishing House: G.M. Kabanovskiy, Tech. Ed.: S.O. Kabanovskiy.

PURPOSE: This collection of articles is intended for technical personnel interest-
ed in recent studies and developments of vacuum steelmaking practice and equip-
ment.

CONTENTS: The book contains information on steel making in vacuum induction fur-
naces, and also on vacuum treatment of steels, reduction processes in vacuum, and degassing of
steels, and alloys. The functioning of apparatus and equipment, especially
steel, furnaces and vacuum boiler pumps is also analyzed. Personalities are
mentioned in connection with some of the articles and will appear in the table
of contents. Three articles have been translated from English. Some of the

Kabanov, I. P., and S.I. Dmitriyev. Effect of Vacuum Treatment [in a Ladle]
on the Mechanical Properties of the Ingot of the Oxide Inclusions
Methods of Treating Irons 127

PART IV. DEGREE OF STEEL AND ALLOYS

Kozlov, L.M., A.I. Ivanov, and I.M. Semakova. Vacuum Treatment of Bessemer
Steel 145

Kuznetsov, M.P., and G.E. Zolotarev. The Effect of Vacuum Treatment in Ladle
on the Properties of Bessemer-Kill Steel 151

Kuznetsov, M.P., and V.D. Kozlov. The Effect of Vacuum Treatment in Ladle
on the Weldability of Bessemer Constructional Steel 156

Ovchinnikov, G.M., G.M. Zhukovskiy, V.I. Anshakov, and V.I. Zhukovskiy.
K.O. Lapshin. Use of Vacuum for Improving the Quality of Alloyed Steels
Manufactured by the "Open-Heart" Process. Some Theoretical and Practical Pro-
blems of Steel Refining 176

Chernov, E.M., A.P. Zheleznyakov, and V.I. Kozlov. The Effect of Vacuum
Treatment of Metal Forming on the Quality of Steel (the work was
performed by the Department of the Scientific and Technological Institute (Group Special
Forming Plant, Leningrad, U.S.S.R. in cooperation with the participation of engineers
Kuznetsov, M.P., Kabanovskiy, I.M., Bobkov, L.D., Barash, A.K., Yan'
V.I., Smolin, A.I., Dmitriyev, S.I., Galov, M.P., Volynskiy and G.P. Parkhomenko) 189

Zolotarev, G.E., I.M. Kuznetsov, A.M. Glazov, A.I. Fedak, M.G. Ginzburgskiy,
P.K. Anshakov and I.M. Shukhman. Vacuum Treatment of Molten Transformer
Steel and of Solid Steel (A.S. Stepanov, L.S. Kabanovskiy, P.S. Pashchikov,
V.I. Kabanovskiy, V.I. Kabanovskiy and P.A. Kabanovskiy participated in the work) 196

Zolotarev, G.E., I.M. Kuznetsov, A.M. Glazov, A.I. Fedak, M.G. Ginzburgskiy,
P.K. Anshakov and I.M. Shukhman. Investigation of Vacuum-
Treated Steel for Casting 205

Malinets, S., and I. Kabanovskiy. (Soviet Union People's Republic, Pison Plant
Ismail Leningrad). Use of Vacuum for Raising the Quality of Aluminum Alloys 211

Duk, G. (Polish People's Republic, Institute of Iron Metallurgy in Gliwice).
Vacuum Melting and Pouring of Alloyed Carbon Steel 219

Baronov, V.I., P.M. Kabanovskiy and I.M. Semakova. Desulfurization of Molten
Iron Alloys in Vacuum 223

Zolotarev, G.E., and V.I. Kabanovskiy. Destruction of Bismuthite Inclusions
in the Vacuum Treatment of Steel 230

Dmitriyev, S.I., A.M. Smolin, and I.M. Semakova. Investigation of the
Kinetics of Steel Desulfurization in Vacuum by Means of a Mass Spectrometer 243

Dmitriyev, S.I., G.I. Kabanovskiy, and B.M. Kabanovskiy. The Effect of Hydrogen and
Nitrogen on the Activity of Silicon in Molten Cast Iron 248

Kabanovskiy, I.M. Investigation of Gas Liberation and Penetrability of Ceramics
in Vacuum 251

18 3200

32596

S/137/61/000/011/017/123

A060/A101

AUTHORS: Kazachkov, I.P., Khitrik, S.I.

TITLE: Effect of vacuum-treatment of liquid carbonless ferrochrome upon oxide impurities

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 11, 1961, 25, abstract 11V172 ("Sb. nauchn. tr. Dnepropetr. metallurg. in-ta", 1958 (1959), no. 37, 145 - 158)

TEXT: Vacuum treatment of Fe-Cr in the ladle makes it possible to obtain ingots with lowered (by ~ 35%) oxide-impurity content. Under vacuuming of the Fe-Cr its purification from suspended oxide impurities is furthered by the more intensive liberation of gases and the consequent stirring of the alloy, which occur at a residual pressure of 250 - 100 mm of mercury. The oxide impurities are borne out into the slag by the rising streams of the alloy and by adhering to the up-floating gas bubbles. The holding of Fe-Cr under vacuum beyond the point at which the noticeable liberation of gas bubbles from it stops, has no effect upon the further purification of the alloy of oxide impurities. The degree of purification of the Fe-Cr of oxide impurities depends chiefly upon their con-

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32596

S/137/61/000/011/017/123
A060/A101

Effect of vacuum-treatment ...

tent in the state of suspension during the time of vacuuming, and the higher is the Si concentration and the lower the temperature of the Fe-Cr, the more oxide impurities are contained in the alloy in the state of suspension before the vacuuming, and the higher the degree of purification from them of the Fe-Cr during the vacuuming period. As result of the vacuum treatment the Fe-Cr is obtained with a lowered Si and gas content. Under crystallization of the ingots made of this Fe-Cr, less oxide impurities are formed in them and the oxidation-gas cavities present in ordinary Fe-Cr ingots, which are an additional source of oxide contamination of these ingots, are absent. There are 6 references. X

V. Gasilina

[Abstracter's note: Complete translation]

Card 2/2

KAZAGHKOV, I.P.; PUKHNAREVICH, G.P., kand. tekhn. nauk;
UL'YANOV, D.P., inzh.

Decoxidation of Bessemer rail steel by means of a complex
Mn-Fe-Al liquid alloy. Met. i gornorud. prom. no.6:68-69
N-D '62. (MIRA 17:8)

1. Institut chernoy metallurgii Gosudarstvennogo komiteta
Soveta Ministrov SSSR po chernoy i tsvetnoy metallurgii (for
Kazachkov, Pukhnarevich).

L 29256-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG/JI

ACC NR: AF6019311

SOURCE CODE: UR/0286/65/000/018/0031/0032

INVENTOR: Kazachkov, I. P.; Dekhanov, N. M.; Gavro, L. P.; Semen'kov, V. I.; Kiselev, Yu. Yu. 3/B

ORG: none

TITLE: Alloy for alloying steel. Class 18, No. 174649

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 31-32

TOPIC TAGS: chromium containing alloy, alloy steel, manganese containing alloy, ferroalloy

ABSTRACT: ²¹In order to shorten the alloying period and reduce loss of elements the following alloy and its constituents is proposed: 34-36 Cr, 23-31 Mn, 10-12 Si, 0.8-1.2 C, balance--iron. [JPRS] _{27 27}

SUB CODE: 11 / SUPM DATE: none

Card 1/1 cc

UDC: 669.15'26'74'782

1 29248-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AF6019312 SOURCE CODE: UR/0286/65/000/018/0032/0032

INVENTOR: Kazachkov, I. P.; Dekhanov, N. M.; Gavro, L. P.; Semen'kov, V. I.; Kiselev, Yu. Yu. 34
B

ORG: none

TITLE: Alloy for deoxidizing steel. (Class 18, No. 174650

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 32

TOPIC TAGS: alloy, metal purification, steel, manganese base alloy, ferroalloy

ABSTRACT: An alloy for deoxidizing steel is proposed to accelerate the process of melting the reducing agent and contains (in %): 65-72 Mn, 10-12 Si, 4-6 Al, 2.5-3.0 C, balance--iron. [JPRS]

SUB CODE: 11 / SUEM DATE: none

Card 1/1 CC UDC: 669.183.422: 669.046.558.6

KAZACHKOV, L., inzh.-mayor

Our flight-testing station. Av. i kosm. 47 no.6:73-76 Jg '65.
(MIRA 18:5)

KAZACHKOV, M. M.

AUTHORS: Kazachkov, M.M. and Abozhik, I.N.

68-12-9/25

TITLE: From Experience of Changing Anchoring Installations on Operating Coke Oven Batteries. (Opyt zameny ankerazha deystvuyushchikh koksovykh batarey)

PERIODICAL: Koks i Khimiya, 1957, No.12, pp. 27 - 28 (USSR)

ABSTRACT: The procedure adopted for replacing the armouring frames of brickwork and straightening of the anchoring columns on operating coke oven batteries of the Chelyabinsk Metallurgical Works is outlined. (Chelyabinskiy Metallurgicheskiy zavod). There are 3 figures.

ASSOCIATION: Koksokhimmontazh

AVAILABLE: Library of Congress
Card 1/1

KAZACHKOV, M.M.; KOGAN, A.D.

Building a coke oven battery. Prom. stroi. 39 no.7:39-40
'61. (MIRA 14:7)
(Coke ovens)

LIKHOGUB, Ye.P.; KAZACHKOV, M.M.

Organization of single operations in building coke ovens.
Koks i khim. no.7:35-37 JI '61. (MIRA 14:9)

1. Koksokhimstantsiya (for Likhogub). 2. ~~Vsesoyuznyy~~ trust po
stroitel'stvu i montazhu koksokhimicheskikh zavodov (for Kazachkov).
(Coke ovens)

KAZACHKOV, P.P.

Communications in automotive and highway departments. Avt.dor.
18 no.5:22 S'55. (MLRA 9:1)

1. Nachal'nik otdela svyazi Gushosdora.
(Telephone) (Transportation, Automotive)

KAZACHKOV, R.V.

Measuring the temperature of pistons in high-speed internal
combustion engines. Izv.tekh. no.5:25-27 My '60. (MIRA 14:5)
(Thermocouples)

KAZACHKOV, R.V.

Valve-type pickup for indicating pump strokes of internal
combustion engines. Izv.tekh. no.9:28-30 S '62. (MIRA 15:11)
(Electronic instruments)

KAZACHKOV, R.V., inzh.

Study of the effect of a blowout on the thermal stresses in a four-cycle pressure-fed diesel engine. Izv. vys. ucheb. zav.; energ. 5 no.1:69-76 Ja '62. (MIRA 15:2)

1. Khar'kovskiy politekhnicheskiy institut imeni V.I.Lenina.
Predstavlena kafedroy dvigateley vnutrennego sgoraniya.
(Diesel engines)

KAZACHKOV, R.V., inzh.

Studying the effect of the working process parameters on the
thermal stresses of high speed diesel engines with supercharging.
Energomashinostroenie 8 no.5:4-7 My '62. (MIRA 15:5)
(Diesel engines--Testing)

KAZACHKOV, R.V., inzh.

Studying the gas exchange in a four-stroke diesel engine by
means of gas analysis. Energomashinostroenie 7 no.11:13-
16 N '61. (MIRA 14:11)

(Diesel engines)

KAZACHKOV, R.V., irsh.

Study of the gas exchange of the high-speed four-cycle D6 engine
by means of the analysis of the gas. Teplovoz.i sud.dvig. no.3:
218-228 '62. (MIRA 16:2)
(Diesel engines)

KAZACHKOV, R.V., kand. tekhn. nauk

Investigating the effect of valve lap on the performance of
pump strokes of a supercharged diesel engine. Avt. prom. 29
no.7:7-9 J1 '63. (MIRA 16:8)

1. Khar'kovskiy politekhnicheskiy institut imeni Lenina.
(Diesel engines--Testing)

KAZACHKOV, R.V., kand.tekhn.nauk

Studying heat transmission in a high-speed diesel engine by means of forced supercharging. Trakt. i sel'khoz mash. 33 no.12:12-14 D '63. (MIRA 17:2)

1. Khar'kovskiy politekhnicheskii institut imeni Lenina.

APPROVED FOR RELEASE: 06/13/2000

APPROVED FOR RELEASE: 06/13/2000

APPROVED FOR RELEASE: 06/13/2000

TOPIC TAGS: diesel engine, thermocouple, heat production, cooling water system/
CH12/15 diesel engine, PPTV 1 potentiometer, GZP 47 optical galvanometer, EU 1
08011081

APPROVED FOR RELEASE: 06/13/2000

emf was measured with an EO-7 oscillograph as a null instrument.
the thermocouple was made of material AK-4. The results showed that

L 24112-68

ACCESSION N

the 27112-68

SUBMITTED: 00

ENCL: 00

SUB CODE: 00

NO REF 00

Card 2/2

ACCESSION NR: AP5001141

S/0113/64/000/007/0007/0010

AUTHOR: Kazachkov R. V. (Candidate of technical sciences)

TESTS HAVE SHOWN THAT IN A SUPERCHARGED DIESEL ENGINE THE PISTON TEMPERATURE

Tests have shown that in a supercharged diesel engine the piston temperature

Card 1/2

L 24775-05

ACCESSION NR: AP5001141

heat the indicator coefficient of heat conduction and the exothermic
the results indicates that the preliminary estimation of the thermal stress in a piston in a
supercharged engine requires the use of the relationship between heat
conduction coefficient and temperature. The results of the analysis
show that the coefficient of heat conduction is a function of temperature
and the results of the analysis are in good agreement with the experimental

ASSOCIATION: Metallurgical Institute of the Academy of Sciences of the USSR
L 24775-05

NO REF SOV. ASS OTHER: 000

SHUMANOVA, A. A.; SOKOLOV, B.S.; CHERKASHENINA, Ye.F.; GARSKOVA,
A.I.; CHULKOV, M.P.; BORISENOK, V.G.; RAIMOVA, S.S.; KULIK,
O.A.; UDALOVA, L.I.; KAZACHKOV, S.S., otv. red.; ZHDANOVA,
L.P., red.

[Agroclimatic manual on Omsk Province] Agroklimaticheskii
spravochnik po Omskoi oblasti. Leningrad, Gidrometeoizdat,
1959. 227 p. (MIRA 17:7)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeo-
rologicheskoy sluzhby. Omskoye upravleniye. 2. Gidrometeoro-
logicheskaya observatoriya Omskogo upravleniya gidrometeorologicheskoy
sluzhby (for all except Kazachkov, Zhdanova).

S/120/63/000/001/049/072
E192/E382

AUTHORS: Yeliseyev, Ye.D. and Kazachkov, V.I.
TITLE: Transistor circuit for the triggering of dekatrons
PERIODICAL: Pribory i tekhnika eksperimenta, no. 1, 1963,
168 - 169

TEXT: The circuit is shown in Fig. 1. The main merit of this triggering system is that the required pulse of 120 - 150 V is obtained without using transformers. This is achieved by connecting two transistors, type П26 (P26), in such a way that the voltage across either of them does not exceed the permissible limit. The "double" pulse is produced by an integrating network $R_1 C_1$. Normally, the two transistors are conducting. When a positive pulse is applied to the base of T_1 both transistors are cut off and a negative pulse whose amplitude is near to that of E_K is obtained at the collector of T_2 . It was possible to obtain operating speeds up to 10 kc/s in the circuit of Fig. 1. There are 2 figures.

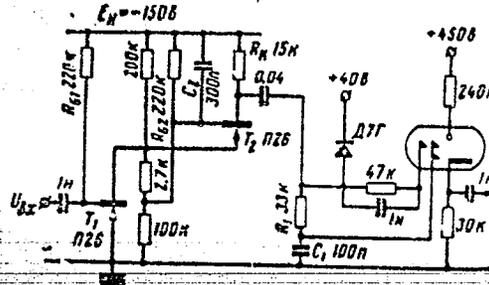
Card 1/2

Transistor circuit

S/120/63/000/001/049/072
E192/E382

ASSOCIATION: Gosudarstvennyy vsesoyuznyy tsentral'nyy nauchno-issledovatel'skiy institut kompleksnoy avtomatizatsii (All-Union State Central Scientific Research Institute of Advanced Automation)

SUBMITTED: January 29, 1962



Card 2/2

Fig. 1:

L 07263-67 EWT(d)/EWT(m)/EWP(v)/EWP(k)/EWP(h)/EWP(l) JR/GD

ACC NR: AT6025304

SOURCE CODE: UR/0000/66/000/001/0036/0048

AUTHOR: Plyutinskiy, V. I.; Kazachkov, V. I.; Vishnyakov, V. I.

30

ORG: none

B+1

TITLE: Certain problems of optimal control of nuclear reactors

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Upravleniye yadernymi energeticheskimi ustanovkami (Control of nuclear power plants), no. 1. Moscow, Atomizdat, 1966, 36-48

TOPIC TAGS: nuclear reactor control, optimal control, reliability, reactor neutron flux

ABSTRACT: The authors describe a control system which makes use of two means of increasing control-system reliability, namely increase of the reliability of the elements themselves and the design of reliable systems made up of unreliable elements. This is done by using a relay-input regulator whose output signal guarantees sufficient speed of the control process in the absence of self oscillations. Such a system is based on a six-group solution of the reactor neutron kinetics. Block diagrams of regulators for the neutron flux, for the coolant temperature, are presented in the single-channel and in the three-channel ("two out of three") operating versions. It is claimed that a tentative reliability of approximately 0.93 can be attained for the

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L 07263-67

ACC NR: AT6025304

three-channel regulator. Another advantage of the three-channel regulator is that faulty operation of individual channels can be readily detected. Orig. art. has: 8 figures and 18 formulas

SUB CODE: 18/ SUBM DATE: 27Dec65/ ORIG REF: 002/ OTH REF: 001

Card 2/2 *pl*

L 07264-67 EWT(d)/EWT(m)/EWP(v)/EWP(k)/EWP(h)/EWP(l) JR/GD

ACC NR: AT6025311

SOURCE CODE: UR/0000/66/000/001/0096/0105

AUTHOR: Kazachkov, V. I.

30
B+1

ORG: none

TITLE: Comparative estimate of the operation of a pulsed and current measuring channels in the control and protection system of a nuclear reactor 19

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Upravleniye yadernymi energeticheskimi ustanovkami (Control of nuclear power plants), no. 1. Moscow, Atomizdat, 1966, 96-105

TOPIC TAGS: reactor neutron flux, nuclear reactor control, neutron counter

ABSTRACT: The article is devoted to a comparison of the errors arising in commonly used neutron counters for reactors and due to γ radiation, statistical errors in measurement of small neutron flux levels, dynamic errors in measurement of low neutron fluxes, the operating range, and the complexity of electronic apparatus. The current type (where the ionization chamber pulses are first integrated by a load resistance and then amplified and recorded) and the pulse type (where the pulses are amplified and counted) were considered. The comparison is based on a statistical analysis of the possible errors and on the presently attained maximum sensitivities of the two types of instruments. Pulsed apparatus, when used with a time constant of 5 sec, can measure a minimum of 1 neutron/cm²sec. Current apparatus can be used during start up purposes with a range of more than six orders of magnitude, whereas pulsed apparatus

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L 07264-67

ACC NR: AT6025311

can be used for automatic starting only within approximately four or five order of magnitude. An increase in the range of the measurement of current type apparatus is possible, although current leakage through the insulation limits this range slightly. Under real operating conditions the sensitivity of current apparatus is 10^5 neutrons/cm²sec. Automatic start of the power reactor with the aid of current apparatus is safe in practice during the first two hours after the start, if the "null" neutron current is lower than 10^5 neutrons/cm²sec. If compensation is provided for the γ quantum level, then current apparatus can be used for safe starting of a power reactor from a level of 100 - 1000 neutrons/cm²sec. Orig. art. has: 1 figure and 19 formulas.

SUB CODE: 18/ SUBM DATE: 27Dec65/ ORIG REF: 002

Card

2/2 *la*

L 07260-67 EWP(d)/EWP(m)/EWP(v)/EWP(k)/EWP(h)/EWP(l) JR/GD

ACC NR: AT6025312

SOURCE CODE: UR/0000/66/000/001/0106/0115

AUTHOR: Kazachkov, V. I.; Klokova, T. F. 4/

ORG: none 14 BT/

TITLE: Logarithmic amplifier in the control system of a nuclear reactor 19SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Upravleniye yadernymi energeticheskimi ustanovkami (Control of nuclear power plants), no. 1. Moscow, Atomizdat, 1966, 106-115

TOPIC TAGS: nuclear reactor control, amplifier stage, volt ampere characteristic

ABSTRACT: The authors consider certain characteristics of a triode logarithmic amplifier which is used extensively in devices for control, protection, and automatic starting of reactors (Fig. 1). Methods of determining such characteristics as the input resistance and the time constant of the input circuit are described, and the volt-ampere characteristic is presented for different resistances connected in parallel with its input. An analysis of the circuit operation leads to the following conclusions: 1. The input resistance of the logarithmic amplifier changes appreciably with the measured current. 2. To eliminate errors due to the deformation of the logarithmic-amplifier characteristic at small input currents, it is necessary to apply an initial bias current at the input circuit. 3. The statistical error of logarithmic amplifiers is independent of the measured current. 4. The dynamic error of the logarithmic amplifier does depend on the measured current, the reactor period, or the

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L 07260-67

ACC NR: AT6025312

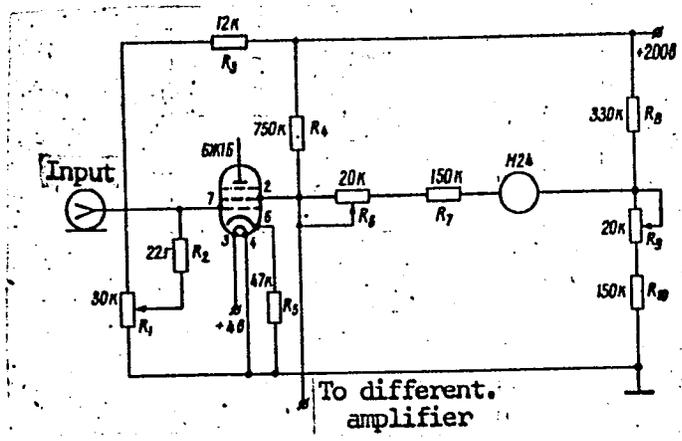


Fig. 1. Schematic diagram of logarithmic amplifier

input capacitance employed. Orig. art. has: 8 figures and 8 formulas.

SUB CODE: 18, 09/ SUBM DATE: 27Dec65/ ORIG REF: 003/ OTH REF: 001

Card 2/2 *la*

L 07261-67 EWT(d)/EWT(m)/EWP(v)/EWP(k)/EWP(h)/EWP(l) JR/GD

ACC NR: AT6025313

SOURCE CODE: UR/0000/66/000/001/0116/0129

AUTHOR: Kazachkov, V. I.

ORG: none

TITLE: Differentiating amplifier in the control system of a nuclear reactor

50
B+/19

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Upravleniye yadernymi energeticheskimi ustanovkami (Control of nuclear power plants), no. 1. Moscow, Atomizdat, 1966, 116-129

TOPIC TAGS: automatic control design, nuclear reactor control, amplifier stage, nuclear safety, reactor neutron flux

ABSTRACT: The author describes the requirements that must be satisfied by a differentiating amplifier when used in different sections of the nuclear-reactor control system, such as the channel for measuring the reactor period, the channel for reactor protection, and in other parts of the system. Since such an amplifier must supply signals to indicating instruments, regulating devices, protective circuits, and signalization circuits, the author analyzes the requirements imposed on the various signals. The nature of the optimal input signal that would provide the most suitable output signals is evaluated and the parameters of a suitable differentiating network are derived. A detailed description is presented of the differentiating amplifier used at medium and high values of neutron flux, with a signal received from a logarithmic amplifier. This amplifier can operate from differential amplifiers having a

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L 07261-67

"APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000721220020-5"

slope from 2 to 10 v/decade, and stays stable at temperatures from 10 to 40C. Orig. art. has: 4 figures and 24 formulas.

SUB CODE: 18, 09/ SUBM DATE: 27Dec65/ OTH REF: 002

Card 2/2 *la*

TSFAS, B.S., dotsent, kand.tekhn.nauk; KAZACHKOV, V.S., student;
KHARITONOV, V.D., student

Closing stresses in Benn's lever-type friction clutches.
Sbor.dokl.Stud.nauch.ob-va Fak.mekh.sel'.Kub.sel' khoz.inst.
no. 1:109-115 '62. (MIRA 17:5)

1. Kuybyshevskiy sel'skokhozyaystvennyy institut.

KAZACHKOV, V.S., student; TSFAS, B.S., dotsent, nauchnyy rukovoditel'
raboty

Causes for the breakdown of a hydraulic press. Sbor.dokl.Stud.
nauch.ob-va Fak.mekh.sel'. Kuib. sel'khoz.inst. no. 1:131-133
'62. (MIRA 17:5)

1. Kuybyshevskiy sel'skokhozyaystvennyy institut.

KAZACHKOV, YE. A.

USSR/Metals - Iron, Diffusion

Nov 51

"Diffusion of Elements in Molten Iron," B. V. Stark, Corr Men, Acad Sci USSR, Ye. V. Chelishchev, Ye. A. Kazachkov

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 11, pp 1689-1695

Expts demonstrated possibility of exptl detn of diffusion coeffs of various elements in liquid steel, iron and alloys. Application of special ceramic device eliminated convective mixing of liquid-metal--phys phenomenon which usually complicates investigation of diffusion processes. This factor makes results obtained much nearer to actual values.

119T100

BCS

Refractories

1346. The production of magnesite crucibles for the melting of metal in Tamman furnaces. -- E. B. CHILUSCHIV and E. A. KAZACHKOV (*Ogneporty*, 16, 472, 1951). To avoid intensive accumulation of C in metal melted in Tamman furnaces when the exp. requires that the metal be kept in the crucible for 1-1.5 hr., magnesite crucibles of a special shape are used. These crucibles are made of powder obtained by crushing magnesite bricks, and can withstand 3-7 melts. The manufacturing process is described in detail. (3 figs.)

KRAMAROV, A.D., professor, doktor tekhnicheskikh nauk; KAZACHKOV, Ye.A., redaktor; MILLER, A.I., redaktor; VAYNSHTEYN, Ye.B., tekhnicheskiiy redaktor.

[Physicochemical processes in steel production] Fiziko-khimicheskie protsessy proizvodstva stali. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1954. 200 p. (MLRA 7:12)
(Steel--Metallurgy)

FILIPPOV, Sergey Ivanovich; ARSENT'YEV, Petr Pavlovich; XAZACHKOV, Ye.A.,
redaktor; SHAROPIN, V.O., redaktor; ATTOPOVICH, M.K., tekhnicheskii
redaktor.

[Experimental work on a theory of metallurgical processes] Eksperimental'nye raboty po teorii metallurgicheskikh protsessov. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po cherno i svetnoi metallurgii, 1955. 119 p. (MIRA 8:5)
(Metallurgy)

POYARKOV, Aleksey Mikhaylovich; BOYARSHINOV, V.A., redaktor; KAZACHKOV, Ya.A.,
redaktor; NETESIN, A.Ye., redaktor; OYKS, G.N., redaktor; LIBERMAN,
S.S., redaktor; ANDREYEV, S.P., tekhnicheskij redaktor.

[The production of steel] Proizvodstvo stali. Khar'kov, Gos.nauchno-
tekh.nzd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1955, 519 p.
(Steel) (MIRA 8:4)

К. М. ЗИЧЕНКО, Ye. N.

BORNATSKIY, Ivan Ivanovich, kandidat tekhnicheskikh nauk; KAZACHKOV, Ye. A., redaktor; SHOROPIN, V. D., redaktor; ATTOPOVICH, M. K., tekhnicheskiy redaktor.

[Desulfuration of Marten steel] Desul'firatsiia martenovskoi plavki. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po cherno i tsvetnoi metallurgii, 1955. 113 p. (MLRA 8:12)
(Steel--Heat treatment)

YAVOYSKIY, Vladimir Ivanovich, doktor tekhnicheskikh nauk; KAZACHKOV,
Ye.A., redaktor; SHAROPIN, V.D., redaktor; EVENSON, I.M.,
tekhnicheskiy redaktor.

[Gases and occlusions in steel ingots] Gazy i vklucheniya v
stal'nom slitke. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po
cherno i tsvetnoi metallurgii, 1955. 247 p. (MLRA 8:12)
(Steel--Analysis)

FILIPPOV, Sergey Ivanovich; KAZACHKOV, Ye.A., redaktor; ZINGER, S.L.,
redaktor izdatel'stva; PETROVA, N.S., tekhnicheskiy redaktor

[Theory of the process of steel decarburization] Teoriia protsessa
obezuglerozhivaniia stali. Moskva, Gos. nauchno-tekhn. izd-vo
lit-ry po cherno i tsvetnoi metallurgii, 1956. 166 p. (MLRA 9:9)
(Steel--Metallurgy)

ROSTOVTSSEV, Sergey Tikhonovich; Yesin, O.A., professor, doktor tekhnicheskikh nauk, retsenzent; KOHDAKOV, V.V., professor, doktor tekhnicheskikh nauk, retsenzent; KAZACHKOV, Ye.A., redaktor; SHAROPIN, V.D., redaktor; VAYNSHTEYN, Ye.B., tekhnicheskii redaktor. SHAROPIN

[A theory of metallurgical processes] Teoriia metallurgicheskikh protsessov. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 515 p. (MLRA 9:5)
(Metallurgy)

KAZACHKOV, Ye. A.

FILIPPOV, Sergey Ivanovich; ARSENT'YEV, Petr Pavlovich; YAKOVLEV,
Valentin Viktorovich; POLYAKOV, A.Yu., retsenzent; KAZACHKOV,
Ye.A., nauchnyy red.; YABLONSKAYA, L.V., red.isd-va;
ISLANT'YEVA, P.G., tekhn.red.

[Converter smelting of steel] Konvertersnaya plavka stali.
Moskva, Gos.nauchno-tekhn.isd-vo lit-ry po chernoi i tsvetnoi
metallurgii, 1959. 432 p. (MIRA 12:6)
(Smelting) (Steel--Metallurgy)

FILIPPOV, Sergey Ivanovich; ARSENT'YEV, Petr Pavlovich; YAKOVLEV,
Valentin Viktorovich; POLYAKOV, A.Yu., retsenzent; KAZACHKOV,
Ye. A. nauchnyy red.; YABLONSKAYA, L.V., red.isd-va; ISLENT'YEVA,
P.G., tekhn.red.

[Converter smelting of steel] Konvertersnais plavka stali. Moskva,
Gos.nauchno-tekhn.isd-vo lit-ry po chernoi i tsvetnoi metallurgii,
1959. 432 p. (MIRA 12:10)

(Bessemer process)

KAZACHKOV YE. A.

Е.А.Казачков

Качество сплавов углерода при
разной геометрии его в стали
мартовского 80999.

- А.П.Прохин Влияние отливных элементов на
С.П.Михайловский свойства стали в процессе кристал-
Л.М.Белкин лизации.
- Ю.С.Голушко
- М.В.Павловский Влияние условий роста на структуру
В.Д.Касаткина мелкокристаллической стали.
- Э.М.Татаров
- С.И.Соболев Завершение и неоднородность
Е.А.Казачков крупных стальных слитков различной
В.А.Мельников конфигурации.
- Е.А.Казачков Температурные условия отвержде-
С.И.Соболев ния крупных стальных слитков.
- Ю.П.Соловьев Борьба с неоднородными дефектами
В.А.Лавренко на стальных слитках.
- В.В.Гуляев
- А.К.Прохоров Непрерывная прокатка стали в вод-
В.П.Лавренко рные легированные слитками
В.М.Лавренко 100x100 мм.
- В.В.Гуляев
- Н.И.Гуляев Исследования процесса отвержде-
А.А.Москвич ния непрерывного слитка стальной
А.А.Новиков 80x100 мм.
- В.В.Гуляев

report submitted for the 5th Physical Chemical
Conference on Steel Production, Moscow-- 30 Jun 1959.

18(3)

AUTHOR:

Kazachkov, Ye. A.

SOV/163-59-2-4/48

TITLE:

The Content of Oxygen in the Metal During Melting in the Recirculating Furnace (Soderzhaniye kisloroda v metalle po khodu plavki v retsirkulyatsionnoy pechi)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959, Nr 2, pp 20 - 26 (USSR)

ABSTRACT:

To intensify the melting process in the open-hearth furnace, the air is usually enriched with 25-30% oxygen. To attain a higher enrichment, M. A. Glinkov (Refs 1 and 2) suggested a recirculating principle, the successful development of which rendered possible the building of furnaces with industrial capacity. The resulting rapid combustion of carbon, the increased content of FeO in the slag, made suspect that the metal received a too high content of oxygen. Therefore, the content of oxygen in the metal was investigated in a 10-ton recirculating furnace. The taking of the sample is described. The analysis of the steelwool bored out of the sample with respect to oxygen was carried out by the alumina method at the Novo-Tul'skiy metallurgicheskiy zavod (Novo-Tul'skiy Metallurgical Works). The present paper comprises the result

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The Content of Oxygen in the Metal During Melting
in the Recirculating Furnace

SOV/163-59-2-4/48

of 52 melts. Figure 1 shows the content of oxygen in the metal in dependence on the carbon content. Figure 2 indicates the excess of oxygen over the quantity of oxygen which is in equilibrium with the carbon. Figure 3 shows the oxygen content at different concentrations of FeO and carbon. The results can be explained by the new theory of steel decarbonization by Professor S. I. Filippov (Ref 11). The lower limit of the oxygen content follows the equilibrium curve developed in theory and is determined by the carbon content of the metal. The upper limit could not be exactly determined, it depends on the ratio of the reaction constants contained in Filippov's formula. Up to a carbon concentration of 0.2-0.3%, the oxygen excess rather remains at the same height. At a lower carbon content, the oxygen excess increases considerably, since at this low carbon concentration the course of the decarbonization reaction is rendered more difficult. Between 0.3 and 2.0% C, the oxygen concentration does not depend on the FeO-content of the slag. This is explained by the fact that, under given conditions, a

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The Content of Oxygen in the Metal During Melting
in the Recirculating Furnace

SOV/163-59-2-4/48

considerable resistance to oxygen transmission arises in the metal. At a lower carbon concentration, however, the oxygen content depends on the FeO-content; here, the resistance of the metal to oxygen transmission is low. A dependence between the combustion rate of the carbon and the acidification of the metal (Fig 4) could not be ascertained. There are 4 figures and 11 Soviet references.

ASSOCIATION: Zhdanovskiy metallurgicheskiy institut
(Zhdanov Metallurgical Institute)

SUBMITTED: August 1, 1958

Card 3/3

18(3)

AUTHORS:

Kazachkov, Ye. A., Sviridenko, F. F. SOV/163-59-2-7/48

TITLE:

The Temperature Conditions of the Tank in the Period of Basic Addition in Dephosphorization (Temperaturnyy rezhim vanny v period dovodki pri fosforistom peredele)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959, Nr 2, pp 38 - 42 (USSR)

ABSTRACT:

In the processing of cast iron with a high phosphorus content, the principal quantity of phosphorus is eliminated from the cast iron during the melting process. The slag produced is poured off, and an admixture of ore, bauxite, lime and scale is added to eliminate the remaining phosphorus. The addition of these large quantities leads to a temperature drop from 1565° to 1525°, as is shown in figure 1, which indicates the average values of 30 measurements. If the temperature was too low before the admixture, an undercooling is generated (Fig 2), the carbon burns too slowly, and the metal becomes inferior in quality, as is proved by the statistic evaluation of 294 rail-steel melts. Figure 3 shows the dependence of the temperature rise on the combustion rate of carbon; figure 4

Card 1/2

The Temperature Conditions of the Tank in the Period SOV/163-59-2-7/48
of Basic Addition in Dephosphorization

shows the influence of the thickness of the slag layer on the carbon combustion and the temperature rise. The pouring-off of the slag speeds up the carbon combustion. Although the temperature must not rise too much to avoid a reduction of the P_2O_5 , it should nevertheless be kept between $1550 - 1570^{\circ}$ in the melting process of rail steel. There are 4 figures and 5 Soviet references.

ASSOCIATION: Zhdanovskiy metallurgicheskiy institut
(Zhdanov Metallurgical Institute)

SUBMITTED: September 15, 1958

Card 2/2

SOV/130-59-1-8/21

AUTHORS: Skoblo S.Ya., ~~Kazachkov Ye.A.~~, Pereverzeva Ye.G.,
Kiriyushkin Yu.I., Strakhov V.G., Sviridenko F.F.,
Bul'skiy M.T., and Alimov A.G.

TITLE: Quality of a Rail-Steel Ingot weighing 9.75 Tonnes
(Kachestvo slitka rel'sovoy stali vesom 9.75 t)

PERIODICAL: Metallurg, 1959, ⁴Nr 1, p 19 (USSR)

ABSTRACT: At the "Azovstal'" works rail-steel ingot weight has been increased for 6.6 to 9.75 tonnes to increase casting-pit capacity and improve the utilization of rolling mill capacity. The authors give a brief description of the results of comparative investigations of large and small ingots. The quality was evaluated from sulphur prints of longitudinal ingot sections, from the macro-structure (with deep etching) of transverse strips, differences in the etching of samples from different zones of the ingot and distribution of segregated impurities and non-metallic inclusions in the ingot. Among the conclusions drawn are that the two ingot types are equal in physical,

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Quality of a Rail-Steel Ingot weighing 9.75 Tonnes

structural and chemical heterogeneity, the non-metallic inclusions in the large ingot do not exceed those in a sound 4.0-tonne rail-steel ingot; the amount of non-metallic inclusions, which greatly affect the mechanical properties, can be reduced by careful preparation of runner and ladle.

ASSOCIATION: Zhdanovskiy metallurgicheskiy institut (Zhdanov metallurgical institute) and the "Azovstal'" works

Card 2/2

SKOBLO, S.Ya.; KAZACHKOV, Ye.A.; STRAKHOV, V.G.

Use of transparent, fusible melts for modeling the ingot solidification process. Izv. vys. ucheb. zav.; Chern. met. no.1:41-46 '60.

(MIRA 13:1)

1. Zhdanovskiy metallurgicheskiy institut.
(Steel ingots--Models) (Solidification)

KAZACHKOV, Ye. A.

85

PHASE I BOOK EXPLOITATION

807/5556

Moscow. Institut stali.

Novoye v teorii i praktike proizvodstva martenovskoy stali (New [Developments] in the Theory and Practice of Open-Hearth Steelmaking) Moscow, Metallurgizdat, 1961. 439 p. (Series: Trudy Mezvuzovskogo nauchnogo soveshchaniya) 2,150 copies printed.

Sponsoring Agency: Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya RSFSR. Moskovskiy institut stali imeni I. V. Stalina.

Eds.: M. A. Glinkov, Professor, Doctor of Technical Sciences, V. V. Kondakov, Professor, Doctor of Technical Sciences, V. A. Kudrin, Docent, Candidate of Technical Sciences, G. N. Oyks, Professor, Doctor of Technical Sciences, and V. I. Yavovskiy, Professor, Doctor of Technical Sciences; Ed.: Ye. A. Borko; Ed. of Publishing House: N. D. Gromov; Tech. Ed.: A. I. Karasev.

PURPOSE: This collection of articles is intended for members of scientific institutions, faculty members of schools of higher education, engineers concerned with metallurgical processes and physical chemistry, and students specializing in these fields.

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New [Developments] in the Theory (Cont.)

80V/5556

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COVERAGE: The collection contains papers reviewing the development of open-hearth steelmaking theory and practice. The papers, written by staff members of schools of higher education, scientific research institutes, and main laboratories of metallurgical plants, were presented and discussed at the Scientific Conference of Schools of Higher Education. The following topics are considered: the kinetics and mechanism of carbon oxidation; the process of slag formation in open-hearth furnaces using in the charge either ore-lime briquets or composite flux (the product of calcining the mixture of lime with bauxite); the behavior of hydrogen in the open-hearth bath; metal desulfurization processes; the control of the open-hearth thermal melting regime and its automation; heat-engineering problems in large-capacity furnaces; aerodynamic properties of fuel gases and their flow in the furnace combustion chamber; and the improvement of high-alloy steel quality through the utilization of vacuum and natural gases. The following persons took part in the discussion of the papers at the Conference: S.I. Filippov, V.A. Kudrin, M.A. Glinkov, R.P. Nam, V.I. Yavovskiy, G.F. Oyks and Ye. V. Chelishchev (Moscow Steel Institute); Ye. A. Kazachkov and A. S. Kharitonov (Zhdanov Metallurgical Institute); N.S. Mikhaylets (Institute of Chemical Metallurgy of the Siberian Branch of the Academy of Sciences USSR); A.I. Stroganov and D. Ya. Povolotskiy (Chelyabinsk Polytechnic Institute); P.V. Umrikhin (Ural Polytechnic Institute); I.I. Fozain (the Moscow "Serp i molot" Metallurgical Plant); V.A. Foklev (Central Asian Polytechnic Institute);

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New [Developments] in the Theory (Cont.)

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and M.I. Beylinov (Night School of the Dneprodzerzhinsk Metallurgical Institute).
References follow some of the articles. There are 268 references, mostly Soviet.

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Yavovskiy, V. I. [Moskovskiy institut stali - Moscow Steel Institute].
Principal Trends in the Development of Scientific Research in Steel
Manufacturing

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Filippov, S. I. [Professor, Doctor of Technical Sciences, Moscow Steel
Institute]. Regularity Patterns of the Kinetics of Carbon Oxidation
in Metals With Low Carbon Content

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[V. I. Antonenko participated in the experiments]

Levin, S. L. [Professor, Doctor of Technical Sciences, Dnepropetrovskiy
metallurgicheskiy institut - Dnepropetrovsk Metallurgical Institute].

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New [Developments] in the Theory (Cont.)

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Gerbator, I.I. [Docent, Moskovskiy vechernyy metallurgicheskiy institut - Night School of the Moscow Metallurgical Institute]. Effective Method of Conducting the Open-Hearth Process

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Kurochkin, K.T. [Docent, Candidate of Technical Sciences], and B.A. Baum [Engineer], [Ural Polytechnic Institute]. Relation Between Actual and Calculated Content of Hydrogen in Open-Hearth Steel

400

Kazachkov, Ye. A. [Docent, Candidate of Technical Sciences, Zhdanov Metallurgical Institute]. Absorption of Oxygen From the Furnace Atmosphere by Metal and Oxygen Content in the Metal During Melting in a Recirculation Furnace

410

Kharitonov, A.S. [Docent, Candidate of Technical Sciences, Zhdanov Metallurgical Institute]. The Rate of Absorption of Oxygen From the Furnace Atmosphere by Metal

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Discussion of Papers

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AVAILABLE: Library of Congress (TW740.M58)

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VK/vrc/mas
10-4-61

KAZACHKOV, Ye. A.

115

PHASE I BOOK EXPLOITATION SOV/5411

Konferentsiya po fiziko-khimicheskim osnovam proizvodstva stali. 5th,
Moscow, 1959.

Fiziko-khimicheskiye osnovy proizvodstva stali; trudy konferentsii
(Physicochemical Bases of Steel Making; Transactions of the
Fifth Conference on the Physicochemical Bases of Steelmaking)
Moscow, Metallurgizdat, 1961. 512 p. Errata slip inserted.
3,700 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut metallurgii imeni
A. A. Baykova.

Responsible Ed.: A. M. Samarin, Corresponding Member, Academy
of Sciences USSR; Ed. of Publishing House: Ya. D. Rozentsveyg.
Tech. Ed.: V. V. Mikhaylova.

Card 1/18

113

Physicochemical Bases of (Cont.)

SOV/5411

PURPOSE: This collection of articles is intended for engineers and technicians of metallurgical and machine-building plants, senior students of schools of higher education, staff members of design bureaus and planning institutes, and scientific research workers.

COVERAGE: The collection contains reports presented at the fifth annual convention devoted to the review of the physicochemical bases of the steelmaking process. These reports deal with problems of the mechanism and kinetics of reactions taking place in the molten metal in steelmaking furnaces. The following are also discussed: problems involved in the production of alloyed steel, the structure of the ingot, the mechanism of solidification, and the converter steelmaking process. The articles contain conclusions drawn from the results of experimental studies, and are accompanied by references of which most are Soviet.

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Physicochemical Bases of (Cont.)

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Panov, A. S., and P. N. Perchatkin. Comparison of the Desulfurizing Capacity of Oxides During the Melting Period in Processing Low-Manganese Pig Irons

66

Shneyerov, Ya. A., A. G. Kotin, and A. G. Derfel'. Accelerating the Open-Hearth Process in the Preparation of the Charge (Pig Iron and Loose Materials)

70

Shneyerov, Ya. A., A. I. Sukachev, and A. G. Kotin. Accelerating the Slag Formation and Melting Processes by Blowing Oxygen into the Bath During the Meltdown Period

81

Kazachkov, Ye. A. Kinetics of the Oxidation of Low-Concentrated Carbon in the Open-Hearth Bath

88

Zorin, O. D., and A. Ye. Khlebnikov. The Kinetic Decarburization

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S/130/61/000/005/003/005
A006/A101

AUTHORS: Sviridenko, F. F., Kazachkov, Ye. A., Vasil'kovskaya, N. P., Lesenko, I. I.

TITLE: Riser with an air gap in the wall

PERIODICAL: Metallurg, no. 5, 1961, 15 - 18

TEXT: Risers used at "Azovstal'" for delayed cooling of feed head metal. are lined with chamotte bricks. The lining is 120 mm thick. Heat insulating conditions can be improved by employing insulated bricks, and the best means of insulation for this purpose is air. Investigations were made to use the heat insulating properties of an air gap in the lining of risers. The use of shaped bricks, which is the simplest method employed at the KMK, was not possible at Azovstal' due to the lack of a ceramic shop. Therefore, standard brick dimensions and shapes had to be employed. The existing design of risers was modified by two methods: 1. In the shell of a conventional riser, 8 - 10 mm thick steel sheets were inserted and fastened by electric welding process in such a manner, that an internal shell was formed that was separated from the external shell by a 70 mm wide gap. The gap was lined with chamotte bricks. 2) A special riser was employed with horizontal ribs in the center of the shell height, supporting

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S/130/61/000/005/003/005
A006/A101

Riser with an air gap in the wall

the bricks. Between the brick lining and the shell there was a 60 mm wide air gap. Heat balances were drawn up for conventional and experimental risers and for this purpose the distribution of temperature along the wall thickness of the risers was determined. Heat losses in the risers are characterized as follows:

	Riser with conventional lining	Riser with air gap
Total heat losses through the feed head at the end of ingot solidifying, in %:	100	59 ✓
of which:		
losses to the surrounding medium	22	45
absorbed by the refractories of the risers	56	24
absorbed by the riser shell	22	31

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A006/A101

Riser with an air gap in the wall

Improved heat insulation reduces the metal volume in the feed head and increases the ingot weight. The upper section of the ingot which is most contaminated with non-metallic impurities, can thus be cut off. Experimental castings made with the new risers showed satisfactory results. However, their large-scale production was impeded by the low stability of the lining. Therefore, a new variant of the risers was designed (Figure 3) where the uniform suspension of the ingot over the whole perimeter of the mold and riser butt line, is assured by an excess of the cross section of the riser (885 x 790) over that of the mold (865 x 770). Grooves, 50 mm wide, in the riser shell prevent the falling out of the upper rows of the lining, and 50 mm - diameter apertures are provided in the walls for the elimination of gases from internal cavities. Experiments showed that risers lined with straight bricks were not less stable than those lined with shaped bricks. Their use will reduce rejects due to contaminations with non-metallic impurities. There are 3 figures.

ASSOCIATION: Zavod "Azovstal'" (Azovstal' Plant); Zhdanovskiy metallurgicheskiy institut (Zhdanov Metallurgical Institute).

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Riser with an air gap in the wall

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Figure 3:

Riser with an air gap in the wall

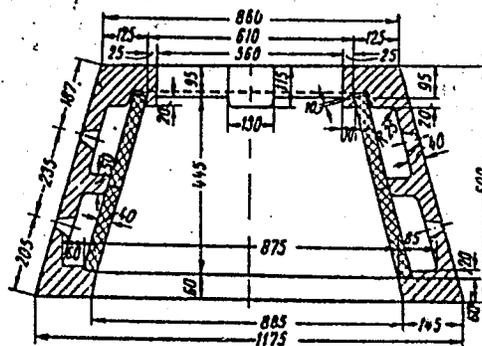


Рис. 3. Призмальная надставка с воздушным зазором в стенке

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S/137/62/000/003/022/191
A006/A101

AUTHORS: Kazaohkov, Ye. A., Skoblo, S. Ya., Kiryushkin, Yu. I., Dorokhov,
V. I., Sapelkin, N. F.

TITLE: Investigating the thermal work of molds for forging ingots

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 44, abstract 3V268
("Sb. nauchn. tr. Zhdanovsk. metallurg. in-t", 1960, no. 6, 68-109)

TEXT: The thermal work of molds was investigated during the solidification of three different sizes of forging ingots, cast into octahedral through-molds with a floating riser. One of the ingots weighing 24.5 tons was cast into a mold at top position of the floating riser; the second ingot weighing 24.5 tons - at a lower position of the floating riser, and the third ingot, weighing 42.5 tons, at a considerable immersion of the floating riser into the mold. All the ingots were cast from grade 55X (55Kh) steel from different heats, melted in basic open hearth furnaces. The temperature distribution at various spots across the mold walls was determined during the solidifying of the ingot from readings of 24 - 26 thermocouples, which were placed on the mold walls at different depths and several height levels. Moreover, during the solidification process, periodic

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Investigating the thermal work ...

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A006/A101

measurements were taken of the air temperature in the lower, middle and top section of the caisson, where the molds were placed. Data on the temperature distribution in the mold walls were used to determine the amounts of heat, its storing at any moment of time, and the amount of heat transferred to the surrounding medium by convection or radiation. On the basis of data on heat losses of the ingots, the advance of the crystallization front in the ingots during their solidification was established. The heat balance structure of the ingot solidification process was revealed. It was established that at the moment of completed solidification with a heavier weight of the ingot there is a rapid increase in the fraction of heat, transferred to the surrounding medium by radiation from the mold surface, and a decrease in the fraction of heat stored by the mold walls.

P. Arsent'yev

[Abstracter's note: Complete translation]

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06/13/2000

CIA-RDP86-00513R000721220020-5

37237

S/137/62/000/003/002/011

E071/E455

18.7/20
AUTHORS:

Skoblo, S.Ya., Kazachkov, Ye.A., Strakhov,
Kiryushin, Yu.I., Sapelkin, N.F.

TITLE:

A study of the kinetics of the process of solidification of the axial part of an ingot by the method of differential probing

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no.3, 1962, 53-59

TEXT: A method of probing of ingots during their solidification and some results on the kinetics of solidification of ingots of the most prevailing shape (wide-side up with a relatively small ratio of the height to mean cross-section) are described. After a brief survey of the usual methods of investigation of the process of solidification of ingots (emptying after a given time intervals during the solidification process, probing with rod) the authors consider that neither method by itself gives sufficient information on the solidification process. Moreo a comparison of the results obtained by various methods indic

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SKOBLO, S.Ya.; KAZACHKOV, Ye.A.; STRAKHOV, V.G.; KIRYUSHIN, Yu.I.;
SAPELKIN, N.F.

Studying the kinetics of the solidification process in the
axial part of an ingot by differentiated probing. Izv. vys.
ucheb. zav.; chern. met. 5 no.3:53-59 '62. (MIRA 15:5)

1. Zhdanovskiy metallurgicheskiy institut.
(Steel ingots--Testing) (Solidification--Testing)

SKOBLO, S.I. [Skoblo, S.Ya.]; KAZACIKOV, E.A. [Kazachkov, Ye.A.]; STRANOV,
V.G. [Strakhov, V.G.]; KIRIUSIN, I.I. [Kiryushin, Yu.I.];
SAPELKIN, N.F.

Studies on the kinetics of the solidification process in the
axial part of the ingot through the method of differentiated
soundings. Analele metalurgie 16 no.4:36-43 O-D '62.